

Lower Little Beaver Watershed **Monitoring and Standards and** **Guidelines Report**

Glasgow Field Station
2006



Introduction

The Lower Little Beaver Watershed is comprised of 124,154 acres of BLM – administered public lands as well as 9,838 acres of private and state lands in south Valley County, Montana. Land ownership is approximately 80% public administered by the BLM. The watershed is comprised of 14 livestock grazing allotments with twelve permittees holding the 10-year term permits. There are currently seven allotment management plans covering this watershed.

The watershed level management program currently being used in the Glasgow Field Station is a result of decisions made in the Judith-Valley-Phillips Resource Management Plan (JVP-RMP) dated September 1994. Initial assessments of the riparian and upland areas of the Lower Little Beaver (LLB) Watershed were conducted during the grazing season of 2000. The LLB Watershed Plan was completed in March of 2001.

History

When the Little Beaver Watershed Plan was completed it was determined during the evaluation phase that the uplands were meeting or exceeding the JVP-RMP requirement that 80% or more of the watershed was in good or excellent condition. In fact, 84% of the lands were meeting the standard.

Below is the table showing the initial standard determination made in the Little Beaver Watershed Plan in 2001.

Allotment # & Name	Are Healthy Rangelands Standards Being Met?				Is livestock grazing a significant factor in allotment not meeting standards?	Narrative Explanation and Recommended Actions
	Upland	Riparian/ Wetland	Water quality	Wildlife/ Bio-diversity		
4551 Upper Brazil	Yes	Yes	Yes	Yes		Maintain current grazing system. Repair VR-2 pipes. Test water quality on VR-2.
4552 Upper Little Beaver	Yes	No	Yes	Yes	No	Maintain current grazing system. Allotment contains part of the Mountain Plover ACEC.
4567	Yes	Yes	Yes	Yes		No changes recommended.
4573 Little Beaver	Yes	No	Yes	Yes	No	Maintain current grazing system. New fences and grazing system installed 2 seasons ago. Address crossing problem. Repair
4574 Miller Coulee	No	No	Yes	Yes	Yes	Convert to deferred rotation system to decrease utilization levels. Build water pipeline to aid livestock distribution in Miller Coulee. All riparian meeting standards except

Allotment # & Name	Are Healthy Rangelands Standards Being Met?				Is livestock grazing a significant factor in allotment not meeting standards?	Narrative Explanation and Recommended Actions
	Upland	Riparian/ Wetland	Water quality	Wildlife/ Bio-diversity		
						Miller Coulee.
4575 Gideon Place	Yes	Yes	Yes	Yes		No changes recommended.
4576 Lower Willow	Yes	Yes	Yes	Yes		Maintain current system. Utilize the existing well.
4577 Mud Creek	Yes	No	Yes	Yes	No	Maintain existing system. Build exclosure on Willow Creek. Monitor
4583 Lower Little Beaver	Yes	No	Yes	Yes	No	Lower water level and allow trickle through Grub reservoir. Test water in Little Beaver Creek for metals. So soil chem.. comparison between Little Beaver and Lonetree creeks. Build exclosure on Little Beaver Creek. Monitor.
4584 Archambeault Place	Yes	NA	Yes	Yes		No changes recommended.
4585 Lewis Reservoir	Yes	Yes	Yes	Yes		No changes recommended.
4586 Upper Mud	Yes	NA	Yes	Yes		No changes recommended.
4587 Duck Creek	Yes	NA	Yes	Yes		No changes recommended.
4592 Bomber Coulee	Yes	NA	Yes	Yes		No changes recommended.

In a joint effort to increase monitoring efficiency and raise permittee awareness the Glasgow Field Station collaborated with Dr. John Lacy to implement a monitoring program for the permittees in this watershed and the Badlands Cooperative State Grazing District. To date, all of the permittees in this watershed are participating in the monitoring program.

Temperature and Precipitation

The following table shows the average and deviation from the average of the temperature and precipitation from two weather stations over the last 5 years:

Ft. Peck Station

<u>Temperature</u>		<u>Precipitation</u>	
5 Year Average	5 Year Deviation	5 Year Average	5 Year Deviation
63.3	0.5	9.3	0.38

Glasgow Airport

<u>Temperature</u>		<u>Precipitation</u>	
5 Year Average	5 Year Deviation	5 Year Average	5 Year Deviation
60.3	0.0	9.6	1.0

All of the deviations shown are positive meaning the deviation is above the 5 year average.

Range Improvements

Since 2001 there have been two pipelines completed. The first was the Miller Coulee pipeline in the Miller Coulee allotment #4574. The second was Tom Tom pipeline that is shared between several allotments including Skunk Coulee #4593, Bomber Coulee # 4592 and Lewis Reservoir # 4585. In addition there were seven water developments (pits and reservoirs) that were constructed in various allotments within the watershed. There were three major road improvement/safety projects that involved detention reservoirs. One, Arrambide Reservoir, is in the MLT watershed but the other two, Grub and Deepcut Reservoirs, are in the Little Beaver watershed. The roads over these structures were reconstructed after replacing the drawdown pipes through them. Grub also had a major rip rap project completed on the face of the embankment as the face was being washed away by wave action threatening the safety and integrity of the road.

Finally, there were two exclosures built in this watershed in compliance with the recommendations of the original watershed document. One was on Willow Creek and the other was on Little Beaver Creek.

Current Status

When the monitoring program was instituted, Dr. Lacey contracted with the Grazing District and the permittees to help them establish a monitoring program with the intention of training the permittees to continue monitoring on their own. The program has been very successful and is a significant factor in the progress that has been made in this watershed.

The BLM's monitoring policy stated that sites not meeting standards would be monitored every year. Sites that were meeting standards would be monitored every three years. The monitoring policy for all seven watersheds within the Glasgow Field Station's area of responsibility will be that, at a minimum, all sites not meeting standards will continue to be monitored yearly while sites that are meeting standards will continue to be monitored every three years. This policy will apply to BLM personnel as well as the permittees. All sites can be monitored more frequently if desired or needed by the BLM or the permittees.

Below is the table depicting the current standard determination in the Little Beaver Watershed made in 2005:

Allotment # & Name	Are Healthy Rangelands Standards Being Met?				Is livestock grazing a significant factor in allotment not meeting standards?	Narrative Explanation and Recommended Actions
	Upland	Riparian/ Wetland	Water quality	Wildlife/ Bio-diversity		
4551 Upper Brazil	Yes	Yes	Yes	Yes		Maintain current grazing system. VR-2 has been repaired.
4552 Upper Little Beaver	Yes	No	Yes	Yes	No	Maintain current grazing system. Allotment contains part of the Mountain Plover ACEC.
4567	Yes	Yes	Yes	Yes		No changes recommended.
4573 Little Beaver	Yes	Yes	Yes	Yes		Maintain current grazing system. New fences and grazing system installed 2 seasons ago.
4574 Miller Coulee	Yes	No	Yes	Yes	Yes	Allotment has been converted to a deferred rotation grazing system and a water pipeline has been installed. * See recommendation note below.
4575 Gideon Place	Yes	Yes	Yes	Yes		No changes recommended.
4576 Lower Willow	Yes	Yes	Yes	Yes		Maintain current system. Existing well is being utilized.
4577 Mud Creek	Yes	No	Yes	Yes	No	Maintain existing system. Exclosure built on Willow Ck.
4583 Lower Little Beaver	Yes	No	Yes	Yes	No	Headgate boards in Grub Res. Replaced with a trickle hole. Exclosures built on Little Beaver Ck.
4584 Archambeault Place	Yes	NA	Yes	Yes		No changes recommended.
4585 Lewis Reservoir	Yes	Yes	Yes	Yes		No changes recommended.
4586 Upper Mud	Yes	NA	Yes	Yes		No changes recommended.
4587 Duck Creek	Yes	NA	Yes	Yes		No changes recommended.
4592 Bomber Coulee	Yes	NA	Yes	Yes		No changes recommended.

* In order to address riparian concerns the pasture fence between pastures 1 and 2 along Sagehen Creek will be moved to the ridge on the west side of Sagehen Creek and the water pipeline will be extended to the south to accommodate two more water tanks in pasture 2 and also extended to the east to provide one more tank in pasture one to facilitate better livestock distribution. These projects are proposed for fiscal year 2007 but are subject to the availability of funds.

Uplands

The only allotment that was not meeting the upland standard was Miller Coulee. In 2005 the uplands were re-assessed and the trend in the allotment is definitely upward. The allotment went from 66% in good to excellent condition in 2000 to 70% in good to excellent condition in 2005. While this may not yet meet the JVP goal of 80% it does meet the Upland Standard of functionality based on potential of relevant reference areas.

In 2005 a number of upland sites were monitored with the assistance of the Malta Field Office Soil Scientist and it was determined that some of the studies were not on representative range sites in relation to relevant reference areas so their usefulness is limited in determining whether or not the allotments are meeting Rangeland Standards. Most of these studies were established over 25 years ago and since then monitoring methods and technology as well as Range Science have improved, so it was decided to make an effort over the next few years to relocate some of the old plots or create new study sites. It is hoped that this will give us a more up to date and comprehensive picture of what is happening on the uplands in this watershed as well as the other watersheds in Valley County.

Riparian

Riparian condition is determined by using the Montana BLM/MRA health and function evaluation form. The form is divided into three main categories: vegetation; geology and soils; and hydrology and streambank. Using the form, a numerical rating is calculated and this number is used to determine overall health of the riparian area; proper functioning condition ($\geq 80\%$); functioning at risk ($\geq 60\text{--}<80\%$); and non-functioning ($<60\%$). The evaluation uses vegetative characteristics as an integrator of factors operating on the landscape. In addition, an analysis of a site's health and its susceptibility to degradation must consider physical factors (soils and hydrology) for both ecological and management reasons. Because many of the factors that influence the condition of the streams and riparian area are due to natural causes (such as sediment deposition from a high water event) and not due to management or livestock grazing, the ratings in the evaluation form have been weighted to take such situations into consideration.

The table below shows the updated riparian scores, by year, for the streams that were not meeting standards:

Table 3

Stream	Allotment #	Study #	Score/year	Score/year	Score/year	Score/year	Score/year	Score/year
Willow Creek	4583	R-436	62/1998	71/2001	73/2002	77/2003	71/2004	67/2005
Little Beaver	4583	R-429	69/1998	79/2002	76/2005			
Little Beaver	4583	R-437	56/1998	70/2002	82/2003	77/2004	77/2005	
Sagehen Creek	4574	R-207	84/1995	80/1998	71/2005			
Willow Creek	4577	R-439	53/1998	51/2001	73/2002	75/2003	71/2004	

Willow Creek in allotment 4583 and 4577, and Little Beaver in allotments 4583 and 4574 have been in functioning-at-risk status since monitoring began in 1995. The reason for the lower rating is a result of the historically incised channel and lack of vegetative cover rather than as a result of livestock grazing. Until the bank slope of these areas becomes more gradual and a floodplain develops, vegetation will be slow to establish. For this reason it is recommended that these areas not be re-evaluated for five years.

Although the monitoring sites for Sagehen and Miller Coulee are in the same allotment and pasture, Sagehen is still rated as functioning-at-risk while Miller Coulee is now in proper functioning condition. This is more likely a result of the morphology of the two channels than anything else. The banks of Sagehen Creek are gently sloping with a wide floodplain allowing for riparian vegetation to become well established, but it also makes access for livestock easier. Miller Coulee is an incised channel with steep banks where riparian vegetation is very slow to establish, but access by livestock is more difficult. To reduce livestock impact on Sagehen Creek, a fence realignment and additional water tanks are proposed as noted earlier in this report.

As a result of the recommendations made in the Little Beaver Watershed Plan, two riparian exclosures were built, one on Little Beaver Creek and the other on Willow Creek. It is still too soon to make any conclusions on the exclosures so data will continue to be gathered and a report will be made at a later date.

The following pages show a series of before and after pictures of selected riparian sites that were not initially meeting standards.

R-207 taken in 1995 on Sage Hen Ck. in Allot. #4574. Score 84.



R-207 taken in 2005 on Sage Hen Ck. in Allot. #4574. Score 71.



R-429 taken on 2002 on Little Beaver Ck. in Allot. #4583. Score 79.



R-429 taken in 2005 on Little Beaver Ck. in Allot. #4583. Score 76.



R-437 taken in 2002 on Little Beaver Ck. in Allot. #4583. Score 70.



R-437 taken in 2005 on Little Beaver Ck. in Allot. #4583. Score 77.



R-439 taken in 2002 on Willow Ck. in Allot. #4577. Score 73.



R-439 taken in 2004 on Willow Ck. in Allot. #4577. Score 71.



Wildlife

Wildlife habitat/biodiversity standards continue to be met in this watershed. The key questions in the initial watershed assessment are listed below and answers to the questions are re-evaluated for 2005.

Key questions:

- 1) Grassland Bird Management; How do we find a balance to meet habitat requirements for species (especially those listed as sensitive) that need a variety of habitats from very short vegetation to dense, tall cover? Is the goal of 80% good to excellent ecological status appropriate for the wildlife species present?

The Little Beaver Watershed continues to provide habitat for grassland birds, in particular those species associated with open habitats with little cover such as McCown's Longspur or Mountain Plover (see question 2), or sage associated species such as Brewer's Sparrow and Greater Sage-grouse. Recommendations from the initial Little Beaver Watershed Assessment suggest converting non-native uplands to native vegetation and initiating a prescribed burn program to provide for grassland heterogeneity. Neither of these recommendations has been implemented although we will be selecting candidate areas for vegetation manipulation to restore native vegetation in 2006. Prescribed burns will probably not result in increased habitat for the species primarily associated with this watershed. Species associated with open ground continue to find adequate habitat due to the soils and limited vegetation potential and sagebrush associated species would potentially be detrimentally affected by burning of sagebrush.

Habitat assessments for Greater Sage-grouse (see below) will be utilized to determine if vegetation treatments are warranted for this watershed in order to improve sagebrush habitat for all sage associated species. Fire will be considered as a treatment option. We will also initiate a bird survey route using Breeding Bird Survey (BBS) methodology through a portion of this watershed in 2006 to monitor birds breeding throughout south Valley County. We also hope to initiate further research concerning McCown's Longspurs in this area.

- 2) Mountain Plover Habitat; What is good mountain plover habitat and how can we manage for it or increase the amount of habitat?

Mountain plovers are currently found in suitable habitat throughout the watershed. Two major management events concerning Mountain Plovers have occurred since the initial watershed report: The Mountain Plover ACEC record of decision was signed in 2003. This ACEC was designated to protect Mountain Plover populations in south Valley County and the management recommendations in the original watershed report were incorporated into the ACEC management plan. In addition, graduate research was conducted by Theresa Childers under the direction of Dr. Steve Dinsmore to provide further information on habitat use and reproductive success of this population of Mountain Plovers. The final report on this research is expected in 2006. The establishment of the ACEC also provides protection for McCown's Longspurs, as BLM

and Montana State Species of Concern associated with habitats used by Mountain Plovers.

- 3) Waterfowl production; What management techniques and land treatments should be employed to enhance or maintain current habitat? Which Willow Creek structures or water spreaders could be utilized for waterfowl habitat?

Waterfowl production within this watershed continues to be mediated by water levels in the reservoirs. As noted in the original watershed report, waterfowl production is not enhanced by dense nesting cover but by the vastness of the cover surrounding breeding reservoirs. Recommendations in the original assessment suggest creating more waterfowl reservoirs, however increased concern with Greater Sage-grouse habitat and a greater emphasis on maintaining natural habitats in the watershed have overshadowed the need for increasing the number of waterfowl production reservoirs.

- 4) Prairie dog management; What do we need to do to carry out the RMP decision concerning prairie dogs? Does this watershed contain potential prairie dog habitat?

No recommendations were made in the original watershed report. We do not anticipate that prairie dogs will be an issue in this watershed because the soils in the watershed probably do not provide habitat for prairie dogs. A Montana Fish Wildlife and Parks Region 6 Prairie Dog Management Plan is currently being developed and, should this plan apply to the watershed, it will be incorporated.

- 5) Greater Sage-grouse habitat; Can Sage-grouse habitat be increased? How did the watershed structures affect Sage-grouse habitat?

Greater Sage-grouse have become a much greater management concern for the BLM since the original watershed report. All eleven known active leks in the watershed continue to be monitored annually. The mean maximum number of males on each lek has varied by year, ranging from a low 11 males/lek in 1997 to 26 males/lek in 2005, but the overall trend is upward. Greater Sage-grouse breeding habitat was assessed for 2 leks within the watershed in 2004 and 2005 (one site on lek 69 in 2004 and multiple sites for lek 23 in 2005). The suitability of these sites for Sage-grouse ranged according to the standards established by the Montana Sage Grouse Working Group suggest that these sites are marginally suitable overall, primarily due to the amount of sagebrush cover. The standards for establishing suitability may reflect conditions for sites outside the northern plains and we are working on establishing standards that may apply better to local conditions. We feel the established standards may be skewed because the number of Greater Sage-grouse in the watershed and surrounding areas are relatively large and constant and appear to vary more with weather factors rather than habitat conditions. This suggests that habitat conditions are currently suitable to produce Sage-grouse when weather conditions allow.

The original watershed assessment suggested that a predation study be initiated however, given current population levels with little information suggesting a long term downward trend independent of weather events, difficulty of such a study and the limited applicability of results (almost all sage-grouse eventually die from some form of predation) efforts have focused on habitat assessment and population monitoring. No work is planned to assess the impacts of watershed structures on Greater Sage-grouse habitat.



McCown's Longspur

Transportation, Recreation and VRM

Transportation and Signage

Off Highway Vehicle (OHV) travel on BLM public lands is regulated by the June 2003 Record of Decision (ROD) Off Highway Vehicle Environmental Impact Statement and Proposed Plan Amendment for Montana, North Dakota and South Dakota. This Record of Decision designated BLM lands as a limited area for OHV use. Limited area means an area restricted at certain times, in certain areas, and/or to certain vehicular use.

Furthermore, the approved preferred alternative in the ROD states that BLM will restrict motorized wheeled cross-country travel yearlong, which effectively limits motorized wheeled travel to existing roads and trails until site specific travel management plans are developed for high, medium, and low priority geographical areas.

BLM public lands within the Little Beaver Watershed area north and west of the Willow Creek Road are within a low priority travel management planning area and those public lands south and east of the Willow Creek Road are within a moderate travel management area. Site specific travel management planning will be initiated within five years of the date of the ROD for moderate priority areas and there are no specific time requirements for initiation of site specific planning for low priority areas. Therefore, until that travel management planning occurs, all motorized wheeled travel on BLM public lands will be restricted to existing roads and trails within the Little Beaver Watershed area. This decision applies to the general public's use on BLM land but allows BLM employees, other government entities, and grazing lessees and permittees motorized wheeled cross-country travel when performing administrative functions in managing the BLM public lands. Examples of grazing permittees' administrative functions include, but are not limited to: Checking vegetative conditions, building or maintaining fences, delivering salt and supplements, moving livestock, checking wells or pipelines as part of the implementation of a grazing permit or lease.

The BLM will ensure that appropriate signs and posters are used to promote safety and convenience for visitors and users, define boundaries, identify management practices, provide information about geographic and historic features and protect vulnerable land areas and resources from misuse. As per the Malta Field Office Sign Plan approved on 10/30/2003, off highway vehicle signing associated with implementing the June 2003 ROD for managing off highway vehicle travel within the Malta Field Office will continue along with informational signing of any recreational sites present or proposed for development within the Little Beaver Watershed area..

Recreation and Public Use

The BLM will maintain and/or enhance the recreational quality of BLM land and resources to ensure enjoyable recreational experiences. Recreation emphasis will be to develop and maintain opportunities for dispersed recreational activities such as hunting, fishing, scenic and wildlife viewing and driving for pleasure.

The grazing allotments within the Little Beaver Watershed area are within the South Valley special recreation management area. There are no developed recreational facilities presently within the area and none are proposed for construction in the near future. The TC Access Road and Willow Creek Road could be nominated to the Back Country Byways program, but public interest and the potential for funding this project is presently low.

Approximately eleven commercial outfitters are issued annual special recreation permits (srp's) within the South Valley special recreation management area to guide their clients to hunt for big game, waterfowl, upland birds, and varmints during the fall and winter hunting season. In addition, this area is also popular for non-commercial hunters not only from Montana but from other surrounding states.

The BLM will not allocate special recreation permits or specific use areas for outfitters and guides. All BLM land is available at the discretion of the Field Manager as long as permittees maintain a special recreation permit and meet the BLM 2930 regulation requirements. Outfitters and other recreation users are required to use weed-free feed on BLM land for their livestock as a part of the field office's integrated weed management program.

The BLM will continue to implement the Leave No Trace and Tread Lightly programs throughout the field office. A pack it in/pack it out garbage policy will be continued throughout the field office, except for developed recreation sites where an entrance fee will be assessed and sanitation and maintenance services implemented.

Visual Resource Management

The BLM will manage activities (oil and gas production, range improvements, wind energy farms, etc) to comply with the Visual Resource Management (VRM) policy. The BLM land within the resource area has been assigned a VRM class based on a process that considers scenic quality, sensitivity to changes in the landscape and distance zone. The grazing allotments within the Little Beaver Watershed area fall within visual resource classes II, III, and IV areas. The objectives for these three visual resource classes and the allotments they affect are:

VRM class II - The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color and texture found in the predominant natural features of the characteristic landscape. Allotments having VRM class II areas within it are: 4585, 4586, 4587, 4592, and 4598.

VRM class III - The objective of this class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape. Allotments having VRM class III areas within it are: 4576.

VRM class IV - The objective of this class is to provide for management activities which require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance and repeating the basic elements. Allotments having VRM class IV areas within it are: 4551, 4552, 4573, 4574, 4575, 4576, 4577, 4583, 4585, 4586, and 4592.

Conclusion

The system of permittee monitoring augmented by BLM monitoring has worked well. Most of the allotments have improved riparian conditions and usually maintained the other standards. There have been no problems as a result of increasing permittee flexibility to modify move schedules within the framework of their term permits. We recommend this type of agreement between the BLM and permittees be implemented in other areas as permittee awareness of expectations and conditions is enhanced.